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Remarks

Claims 1-31 were pending in the application. Claims 1-21 were rejected. Claims 22-31 were withdrawn. No claims were merely objected to and no claims were allowed. By the foregoing amendment, no claims are canceled, claims 1, 7, 9, and 10 are amended, and no claims are added. No new matter is presented.

Restriction

The apparatus and method claims are believed sufficiently similar such that they are commonly searchable without undue burden. The cited MPEP 818.03(a) does not support the proposition that an allegation of overlap is the "mere broad allegation..."

Method claim 1 addresses repair of a part using a modulated electric potential. The apparatus claims identify particular apparatus which may perform that method and with particular modulation. A search for the generic modulation of claim 1 would encompass apparatus configured for the particular modulations of the apparatus claims. The fact that the examiner has selected a primary reference not limited by applicant's claimed use further supports the proposition that the search, whether by keyword or class, has, in fact, been cast broadly enough to encompass the apparatus claims.

Specification

The specification has been amended to address typographical errors, including by removing an incorporation with an erroneous serial number.

Claim Objections

Claim 1 was objected to and has been corrected as proposed.

Claim Rejections-35 U.S.C. 112

Claims 9 and 10 were rejected under 35 U.S.C. 112(2). Applicants respectfully traverse the rejection. MPEP 2173.05(h)II clearly approves of the original claim 9 language. However, in the interest of advancing examination, the proposal has been adopted. Claim 10's dependency has been changed to 7 to provide antecedent for the noted claim 10 language.

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Claim Rejections-35 U.S.C. 102

Claims 1, 3-6, and 15 were rejected as being anticipated by Hass et al. (WO03/028428). Applicants respectfully traverse the rejection.

Haas et al. merely identifies coating deposition for thermal barrier coatings (TBCs). The deposition is distinguished from the base alloy (substrate) (page 1, lines 30-31 and page 21, lines 3-4).

The repair of the cited page 9, line 32 is distinguishable. For example, the repair may be a local weld repair over which the coating is being locally applied. Haas et al. does not suggest substrate repair by its deposition.

Page 21, lines 1-3 was cited for the modulation. This passage merely reads: "By employing plasma enhancement, multisource crucibles and process condition control, the morphology, composition and grain size of deposited layers are controlled." No modulation of the claim 1 potential or the claim 6 ionization is disclosed or suggested, let alone the particular modulations of claim 3-6. Regarding claims 3-6, the Office action merely contained the conclusory and insufficient statement: "Regarding claims 3-6, these limitations are disclosed by Hass, such as heating and modulating." Where in Haas et al.? Variants of the term "modulate" are not found in Haas et al. No modulation function is apparent.

Regarding claim 15, Haas et al. merely casts a broad net of "0.1 to about 32,350 Pa" but actually suggests: "Typical operating pressures are approximately in the 0.05 to 0.5 Torr range..." Page 5, line 32 and page 10, line 1. Clearly there is no anticipation. For the lowest end of the broadest range to be off by an order of magnitude says that something else is clearly going on and teaches away from the subject matter of claim 15.

Claim Rejections-35 U.S.C. 103

Claims 2, 7-12, 15, and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hass et al. in view of Neal et al. (US2002/0076573). Applicants respectfully traverse the rejection.

Neal et al. involves a more analogous goal and should be treated as the primary reference in such a rejection. Haas et al. is improper as a primary reference and patently insufficient as a

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secondary reference.

There would be no motivation for the articulated combination. Regarding the basic combination as applies to claims 2 and 16. The Office action merely contained the conclusory and insufficient statement: "...it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the process of Hass wherein the turbine blade is a Ti alloy and the repair material is Ti-based, in light of the teachings of Neal, in order to efficiently repair titanium superalloy turbine blades." This was not a goal of Haas et al. Presumably, if it was, Haas et al would have adopted the Neal et al. teaching wholesale. Haas et al., instead, had the goal of depositing a bondcoat and there is no motivation to seek variance based upon Neal et al. Furthermore, there would not be expectation of improvement over Neal et al. to attempt the substitution of Haas et al. apparatus and method elements.

As noted above the impropriety of the combination can better be seen with Neal et al as the primary reference. There is clearly no suggestion to modify Neal et al. based upon Haas et al.

Additionally, the combination fails to cure the insufficiencies of the anticipation rejections of the underlying claims.

The rejections of the remaining claims merely further bootstrapped upon the insufficient basic combination. For the deficiency of the basic combination and deficiencies of the underlying anticipation rejection (e.g., no suggestion to optimize a modulation parameter where there is no disclosure or suggestion to modulate at all) these rejections are clearly overcome.

Claims 13 and 14 were rejected under 35 U.S.C 103(a) as being unpatentable over Hass et al. and Neal et al. in view of Carl, Jr. et al. (US6754955). Applicants respectfully traverse the rejection.

The copper chill plate of Carl, Jr. et al. was asserted as being the presently-claimed backing element. However, there is no teaching that this plate is applied to the component or that the material builds up on the base surface and this component. FIG. 4 of Carl, Jr. et al. clearly shows this component spaced apart from the weld build-up material 30. This does not appear to be an exploded view because the surface 32 is shown as irregular whereas the adjacent surface of the chill plate 26 is clearly straight (in section). The chill plate may, for example, be positioned to block adjacent airfoils from splatter.


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Furthermore, there is no suggestion for the combination. The conclusory "to repair the tip of a turbine blade" is not sufficient. There is no suggestion that there is a deficiency for which Carl, Jr. et al. provides a cure.

The rejection also suffers the deficiencies of the underlying rejections based upon Haas et al. and the Haas et al. and Neal et al. combination.

Accordingly, Applicants submit that claims 1-31 are in condition for allowance. Please charge any fees or deficiency or credit any overpayment to our Deposit Account of record.

Respectfully submitted,

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I hereby certify that this correspondence is being facsimile transmitted this 5th day of December, 2006 to the USPTO, at Fax No. 571-273-8300.


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